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TITLE : COMPOSITE MATERIAL

ABSTRACT : PURPOSE: To provide superior lightweight characteristic and heat resistance and also to improve oxidation resistance at high temp. by coating the surface on which Pt or Pt-Al phase is formed with a thin-film layer of TiAl-type intermetallic compound.

CONSTITUTION: The surface of a base material composed of Ti or Ti alloy on which Pt or Pt-Al phase is formed by means of the implantation of Pt ions or Pt and Al ions is coated with TiAl-type intermetallic compound. By the above procedure, on exposure to high-temp. oxidizing atmosphere, Al diffused from the resulting thin-film layer is allowed to react with the Pt phase or Pt-Al phase on the base-material surface and fixed in the form of Pt-Al compound, by which the diffusion of Al in the thin-film layer into the base material can be prevented. As a result, sufficient amounts of Al can be incorporated to the thin-film layer and  $\text{Al}_2\text{O}_3$  contributing as an oxidation protective film can be formed on the surface of the thin-film layer of TiAl-type intermetallic compound in a high-temp. oxidizing atmosphere, by which high-temp. oxidation resistance due to the thin-film layer of intermetallic compound  $\text{TiAl}_3$  as well as the superior lightweight characteristic and heat resistance of Ti alloy, etc., can be obtained.

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<p>(30) Priority:</p> <p>(43) Date of application publication: <b>18.01.90</b></p> <p>(84) Designated contracting states:</p>	<p>(71) Applicant: <b>RAIMUZU:KK</b></p> <p>(72) Inventor: <b>HAYASHI TOKIAK HIDA SHUJI</b></p> <p>(74) Representative:</p>
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**(54) COMPOSITE MATERIAL**

(57) Abstract:

**PURPOSE:** To provide superior lightweight characteristic and heat resistance and also to improve oxidation resistance at high temp. by coating the surface on which Pt or Pt-Al phase is formed with a thin-film layer of TiAl-type intermetallic compound.

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